

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A rotating assembly in which a rotating member is fixed onto a shaft by inserting the shaft into an inner hole of the rotating member, the rotating assembly comprising characterized in that:

a diameter of the inner hole is formed smaller than an outer diameter of an insertion portion of the shaft, and a plurality of grooves extending in the insertion direction are formed on one of the inner hole and an outer circumferential surface of the shaft;

wherein after the diameter of the inner hole is expanded by heating the rotating member, the shaft is inserted into the inner hole and cooled to reduce the diameter of the inner hole again, the other of the inner hole and the outer circumferential surface of the shaft is pressed and raised by the other part and enters the grooves so that both of them are fixed and formed.

2. (Currently Amended) The rotating assembly according to claim 1, characterized in that wherein the rotating member is a cam piece having a circumferential-shaped outer circumferential surface surrounding the inner hole and a cam profile continuing to this the outer circumferential surface and projecting outward, the plurality of grooves are formed in the inner hole, and by inserting the driving shaft into the inner hole, the cam piece is fastened onto the inner hole so as to form a camshaft.

3. (Currently Amended) The rotating assembly according to claim 2, characterized in that at wherein a portion in the inner hole positioned inward of the location where the circumferential-shaped outer circumferential surface continues to the cam profile, a large-diameter escape portion is formed to prevent contact with the outer circumferential surface of the driving shaft when the cam piece is fastened to the driving shaft.

4. (Currently Amended) The rotating assembly according to claim 2 or 3, characterized in that wherein a hardness of the inner hole of the cam piece is higher than the hardness of the outer circumferential surface of the driving shaft.

5. (Currently Amended) A manufacturing method of a rotating assembly in which a rotating member is fixed onto a shaft by inserting the shaft into an inner hole of the rotating member, characterized in that the method comprising:

forming a diameter of the inner hole is formed to be smaller than an outer diameter of an insertion portion of the shaft, and forming a plurality of grooves extending in the insertion direction are formed on one of the inner hole and an outer circumferential surface of the shaft, further heating the rotating member to expand after the diameter of the inner hole is expanded by heating the rotating member, inserting the shaft is inserted into the inner hole and cooled cooling to reduce the diameter of the inner hole again, wherein on the other of the inner hole and the outer circumferential surface of the shaft is pressed and raised by the other part and enters the grooves so that both are fixed.

6. (New) The manufacturing method according to claim 5, wherein the plurality of grooves are formed on the inner hole.

7. (New) The manufacturing method according to claim 6 wherein the rotating member is a cam piece having a cam profile continuing to the outer circumferential surface and projecting outward, and by inserting the shaft into the inner hole, the cam piece is fastened onto the inner hole so as to form a camshaft.

8. (New) The manufacturing method according to claim 7, wherein a portion in the inner hole positioned inward of the location where the circumferential-shaped outer circumferential surface continues to the cam profile, a large-diameter escape portion is formed to prevent contact with the outer circumferential surface of the driving shaft when the cam piece is fastened to the driving shaft.

9. (New) The manufacturing method according to claim 7, where in a hardness of the inner hole of the cam piece is higher than the hardness of the outer circumferential surface of the driving shaft.

10. (New) The manufacturing method according to claim 5, wherein the forming of a plurality of grooves step includes forming the plurality of grooves from at least one of a trapezoidal shape, a circular shape, and a triangular shape.

11. (New) A rotating assembly comprising:

a shaft having an insertion portion, wherein the insertion portion includes an outer diameter;

a rotating member having an inner hole, wherein the inner hole includes a diameter that is smaller than the outer diameter of the insertion portion, further wherein the rotating member is fixed onto the shaft by inserting the shaft into the inner hole of the rotating member,

a plurality of grooves extending in the insertion direction, wherein the plurality of grooves are positioned on at least one of the inner hole and an outer circumferential surface of the shaft;

wherein after the diameter of the inner hole is expanded by heating the rotating member, the shaft is inserted into the inner hole and cooled to reduce the diameter of the inner hole again, wherein the plurality of grooves are pressed into the shaft so that both of the inner hole and outer circumferential surface are fixed and formed.

12. (New) The rotating assembly according to claim 11, wherein the plurality of grooves are formed on the inner hole.

13. (New) The rotating assembly according to claim 12 wherein the rotating member is a cam piece having a cam profile continuing to the outer circumferential surface and projecting outward, and by inserting the shaft into the inner hole, the cam piece is fastened onto the inner hole so as to form a camshaft.

14. (New) The rotating assembly according to claim 13, wherein a portion in the inner hole positioned inward of the location where the circumferential-shaped outer circumferential surface continues to the cam profile, a large-diameter escape portion is

formed to prevent contact with the outer circumferential surface of the driving shaft when the cam piece is fastened to the driving shaft.

15. (New) The rotating assembly according to claim 12, where in a hardness of the inner hole of the cam piece is higher than the hardness of the outer circumferential surface of the driving shaft.

16. (New) The rotating assembly according to claim 11, wherein each of the plurality of grooves is formed in a circular shape.

17. (New) The rotating assembly according to claim 11, wherein each of the plurality of grooves is formed in a triangular shape.

18. (New) The rotating assembly according to claim 11, wherein each of the plurality of grooves is formed in a trapezoidal shape.

19. (New) The rotating assembly according to claim 1, wherein the plurality of grooves are structured to be at least one of a trapezoidal shape, a circular shape, and a triangular shape.